Keona-Mara P. Tucker 12-5-11

Welcome to Mustang city! This city is beautiful from the historic houses to the parks and gardens. In this city you will enjoy watching soccer games, playing at the park, shopping, working, and going to school. Your children will never be bored because there is always something to do. You will enjoy working in one of our various industrial and commercial zones and receive a high income provided by many of our city grants. Our city has passed the clean-air act and it is environmentally green!

We have previously used a coal power plant to power our city. There are many advantages as well as disadvantages, in using coal. Some advantages include; high energy production, it is inexpensive, and it is easily distributed all over the world. Although these examples may seem beneficial there are some disadvantages also. Some disadvantages are that coal produces a lot of pollution and coal is not a renewable power source, and lastly coal is a fossil fuel and when fossil fuels are burned it releases carbon dioxide, which is a powerful greenhouse gas. If the carbon dioxide keeps getting trapped in the earth’s atmosphere it could contribute and effect global warming.

This is why we planned to construct a better way to get energy and still stay environmentally green. What would be a better power source than using a gift from Mother Nature that lights every aspect of the earth each day? …the sun! The sun will always be a reliable source and solar power is renewable, has a life span of 30-40 years, does not cause pollution, and Solar cells make absolutely no noise at all. They do not make a single peep while extracting useful energy from the sun. On the other hand, the giant machines utilized for pumping oil or mining coal is extremely noisy and therefore very impractical.

If there happens to be a lack of sun, batteries will save and store the energy from the sun and use it for a rainy day. So every time the solar panels collect energy the battery saves a percentage of the energy to use when the sun is not out, it’s just like saving money for a rainy day! We are still planning to have an alternative power source, just in case. Our alternative would be wind power and we would be using wind turbines. Wind is also a renewable power source, environmentally safe and it does not cause pollution. Wind power is also not a fossil fuel so it shortens the chances of global warming.

To catch the sun at its finest times we need to build solar panels. A solar panel is the perfect tool to use for this type of power source. The creation of solar panels involves cutting crystalline silicon into tiny disks less than a centimeter thick. The thin, wafer-like disks are then carefully polished and treated to repair and gloss any damage from the slicing process. After polishing, dopants (materials added to help an electrical charge in a semiconductor or photovoltaic solar cell) and metal conductors are spread across each disk. The conductors are aligned in a thin, grid matrix on the top of the solar panel, and are spread in a flat, thin sheet on the side facing the earth. And they are lastly put on top of houses, buildings, cars or even put on people.

Solar panels are not made out of wood from a tree or metal or steel. Solar panels do not just fall from the sky and land automatically on top of our houses. In order to build these panels, we need an abundant amount of silicon. Silicon is a natural and safe resource. Over 90% of the Earth's crust is composed of silicate minerals, making silicon the second most abundant element in the earth's crust. Silicon is vital to solar photovoltaic (PV) cells because it is the semiconductor material that enables the photoelectric effect to occur within the cell, which then makes the panel able to store the sun rays. Silicon Is not only used for solar panels. It is used in the production of computers, computer chips, pottery/enamel, construction, and glass. The depletion of this natural resource could lead to a lower supply and a higher demand which raises the price of silicon and a lower production rate. There is a solution for this dilemma- instead of using the original silicon rock; we could produce a synthetic silicon element. The synthetic version of silicon would have the same ability of the regular silicon and stay economically beneficial.

When it comes to cost you may have mixed feelings and become skeptical. The total cost of to run a solar power plant is around $5-10 billion. The largest power plant panel can store 300 watts p/hour each. The panels alone are around $1500-$2500 each. If there are six panels on each grid, the grid as a whole will be able to store 18,000 watts p/hour. But no worries! The creation of solar energy requires little maintenance. Once the solar panels have been installed and they are brought up to maximum efficiency there is little to do to ensure they are in perfect working order.

As time moves on and technology advances, solar power does as well. In the future solar panels will not even be panels. They could be a thin glassy type of paper. With this “panel paper” a whole other level of solar powered technology could come into effect. Solar powered windows for cars and buildings, solar powered sun glasses, and even solar powered jewelry could be applied to our everyday lives. In the future the roofs on top of houses and buildings could be made out of a thicker version of “panel paper”.

In conclusion, our city is far from the rest, our solar technology production is off the charts and provides various employment and education opportunities. The unique innovation of solar power includes; the long life span, low pollution, a renewable resource and requires little maintenance.